

Application No.: 09/910,425

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**REMARKS**

Claims 1, 3-9, and 11-18 are pending. Claims 1, 6, 14, and 17 have been amended. Independent claims 1 and 17 have been amended to clarify that the mechanical wear indicator is positioned between abrasive composite elements or is contained in a lower portion of at least one of the abrasive composite elements. Support for the amendment can be found, for example, in originally filed FIGS. 2 and 11 (now FIGS. 1 and 2) and their accompanying descriptions.

Applicant respectfully requests reconsideration of claims 1, 3-9, and 11-18 in view of the above amendments and the following remarks.

**I. Claim 14 is Clear and Definite**

Claim 14 stands rejected under 35 U.S.C. § 112, second paragraph, as allegedly being indefinite. Applicants have amended claim 14 to clarify that a single wear indicator element is recited in the claims. It is understood that the "comprising" language used in the claims does not limit the claimed invention to a single wear indicator element. In view of this amendment, claim 14 is clear and definite and the rejection should be withdrawn accordingly.

**II. Claims 1, 3, 5-7, 11-15, 17 and 18 are Novel over Gagne**

Claims 1, 3, 5-7, 11-15, 17 and 18 stand rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by Gagne (U.S. Pat. 5,243,790). Applicant requests reconsideration of this rejection because Gagne does not teach or suggest a fixed abrasive article for planarizing wafers that includes a textured three-dimensional abrasive composite with a mechanical wear indicator positioned between abrasive composite elements or contained in a lower portion of at least one of the abrasive composite elements.

Gagne discloses an abrasive member for surfacing "relatively hard materials such as granite, marble, limestone, concrete, artificial stones, ceramics and hard resins." Gagne, column 1, lines 9-11. Gagne's abrasive member includes abrasive segments 56 having a line of demarcation 94 which "provides a visual indication of the level of wear" of upper portion 90 of abrasive segment 56, wherein line of demarcation 24 is located at upper portion 90 of abrasive segment 56. Gagne

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does not teach or suggest including a wear indicator between abrasive composite elements or contained in a lower portion of at least one of the abrasive composite elements as recited in Applicant's claims. Accordingly, claims 1, 3, 5-7, 11-15, 17 and 18 are novel over Gagne, and the rejection under 35 U.S.C. § 102(b) should be withdrawn.

**III. Claims 1, 3-9, and 11-12 and 14-16 are Not Obvious in view of "Applicant's Admitted Prior Art" and Robinson**

Claims 1, 3-9, and 11-12 and 14-16 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over "Applicant's Admitted Prior Art" in view of Robinson. Applicant respectfully traverses this rejection because neither Robinson nor any reference in "Applicant's Admitted Prior Art," alone or in any proper combination teach or suggest a fixed abrasive article for planarizing wafers that includes a textured three-dimensional abrasive composite with a mechanical wear indicator positioned between abrasive composite elements or contained in a lower portion of at least one of the abrasive composite elements.

Robinson discloses a polishing pad having voids that are used to contain chemicals to provide wear indication. However, Robinson does not teach or suggest the abrasive composite elements that form a textured three-dimensional composite, much less a textured three-dimensional abrasive composite with a mechanical wear indicator positioned between abrasive composite elements or contained in a lower portion of at least one of the abrasive composite elements as recited in Applicant's claims. The voids 12 of Robinson remain embedded within the polishing pad and do not create composite elements.

Moreover, there is no evidence of record indicating that those having ordinary skill in the art at the time the invention was made would have been properly motivated to combine any of the references of "Applicant's Admitted Prior Art" with Robinson, much less to combine them in a manner which would have produced Applicants' claimed invention. Patent claims cannot be found obvious in view of a combination of references unless there is some suggestion or incentive to do so. *ACS Sys., Inc. v. Montefiore Hosp.*, 732 F.2d 1572, 1577 (Fed. Cir. 1984). Rather, it must be shown "that the skilled artisan, confronted with the same problem as the invention, would select the elements from the cited prior art references for combinations in the manner claimed." *In re Rouffet*, 149 F.3d 1350, 1357 (Fed. Cir. 1998). The Office Action fails

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to provide proper motivation to combine the references to produce Applicant's claimed invention to support a *prima facie* showing of obviousness.

Accordingly, the rejection of claims 1, 3-9, and 11-12 and 14-16 under 35 U.S.C. § 103(a) as being allegedly unpatentable over "Applicant's Admitted Prior Art" in view of Robinson should be withdrawn for at least these reasons.

**IV. Claims 1, 3-9, and 11-18 are Not Obvious in view of "Applicant's Admitted Prior Art" and Cheek**

Claims 1, 3-9, and 11-18 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over "Applicant's Admitted Prior Art" in view of Cheek (U.S. 5,913,713). Applicant respectfully traverses this rejection because there is no evidence of record indicating that Cheek or any reference of "Applicant's Admitted Prior Art," alone or in any proper combination, teach or suggest a fixed abrasive article for planarizing wafers that includes a textured three-dimensional abrasive composite with a mechanical wear indicator positioned between abrasive composite elements or contained in a lower portion of at least one of the abrasive composite elements.

Cheek reports a polishing pad that includes a wear indicator. The polishing pad is used with a polishing slurry (see, e.g., column 4, lines 12-16). The wear indicator is formed from grooves on the backside of the bulk polishing pad material. As the pad wears thinner during use, a visual indication appears as a result of a high contrast material placed in the grooves (see, e.g., column 6, line 11 through column 8, line 13).

Cheek does not teach or suggest the use of a fixed abrasive having abrasive composite elements having abrasive particles dispersed in a binder, much less a fixed abrasive article for planarizing wafers that includes a textured three-dimensional abrasive composite with a mechanical wear indicator positioned between abrasive composite elements or contained in a lower portion of at least one of the abrasive composite elements. Further, it is unclear from the teachings of Cheek how one skilled in the art, aware of the surface topography of a fixed abrasive having a textured three-dimensional abrasive composite comprising abrasive composite elements having abrasive particles dispersed in a binder would combine the teachings of Cheek with a fixed abrasive article to create the present invention. It is unclear, for example, how the grooves on the

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backside of a planar polishing pad as reported by Cheek could be used to monitor the height of the composite elements of the textured surface of the present invention. Accordingly, those of ordinary skill would not have been properly motivated to combine the unspecified references with Cheek, much less to combine them in a manner that would have produced Applicants' claimed invention.

For at least these reasons, the rejection of claims 1, 3-9, and 11-18 under 35 U.S.C. § 103(a) as being allegedly unpatentable over "Applicant's Admitted Prior Art" in view of Cheek should be withdrawn.

#### **V. Claims 4 and 16 are Not Obvious in view of Gagne and Cheek**

Claims 4 and 16 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Gagne alone or Gagne in view of Cheek. Applicant respectfully traverses this rejection because the Office Action provides no evidence of record indicating that those of ordinary skill would have been properly motivated to combine Gagne with Cheek, much less to combine them in a manner that would have produced Applicant's invention as claimed in claims 4 and 16.

As discussed above, Neither Gagne nor Cheeks, alone or in any proper combination, teach or suggest a fixed abrasive article for planarizing wafers that includes a textured three-dimensional abrasive composite with a mechanical wear indicator positioned between abrasive composite elements or contained in a lower portion of at least one of the abrasive composite elements, as recited in Applicant's claims. Further, it is unclear how one skilled in the art would combine the teachings of Gagne with Cheek to create the present invention.

Accordingly, the rejection of claims 4 and 16 under 35 U.S.C. § 103(a) as being allegedly unpatentable over Gagne alone or Gagne in view of Cheek should be withdrawn.

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**VI. Claims 4, 13, 17 and 18 are Not Obvious in view of "Applicant's Admitted Prior Art", Robinson, and Cheek et al.**

Claims 4, 13, 17, and 18 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over "Applicant's Admitted Prior Art" and Robinson, in view of Cheek et al. As discussed above, Robinson, Cheek et al., and any reference in "Applicant's Admitted Prior Art," alone or in any proper combination, do not teach or suggest a fixed abrasive article for planarizing wafers that includes a textured three-dimensional abrasive composite with a mechanical wear indicator positioned between abrasive composite elements or contained in a lower portion of at least one of the abrasive composite elements. Accordingly, the rejection of claims 4, 13, 17, and 18 under 35 U.S.C. § 103(a) as being allegedly unpatentable over "Applicant's Admitted Prior Art" in view of Robinson and Cheek et al. should be withdrawn.

**VII. Conclusion**

In view of the above, it is submitted that the application is in condition for allowance. Reconsideration of the application is requested. The Examiner is invited to contact Applicant's undersigned representative with any questions concerning Applicant's application.

Respectfully submitted,

December 5, 2005

Date

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